

From: "Art Dohmann" <artdohmann@gmail.com>
To: Jose Torres/R6/USEPA/US@EPA
Date: 04/17/2011 04:31 PM
Subject: Your email of April 12, 2011

Jose,

I will begin to answer some of your questions and will do additional research to provide additional data. Slide No. 1- This slide was generated by the Goliad County Groundwater Conservation District to show all wells in the vicinity of the permit area and to expand that area in the downdip direction of south-southeast. The blue circles represent livestock supply wells. The blue diamonds represent domestic supply wells. The red circles represent 7 domestic supply wells and 1 livestock supply well. These 8 wells had discolored water from April 2007 through October 2008. During this period, borehole exploration drilling was in progress just down-dip of these wells. Our analysis, based on plugging data that showed many of these boreholes to be left open for days and weeks, is that the boreholes acted as vertical conduits to drain the upper sands to lower sands. This major loss of water volume from the upper sands is equivalent to large volume pumping which significantly increases the flow rate in the aquifer which can create turbulence releasing clay deposits into the water.

Slide No. 2 is part of the original UEC application. UEC stated that they had documented most of the wells in the area but not all of the wells due to the inability to schedule a visit with the landowners.

Slide No. 3. I do not know why the water supply wells are not shown in full detail. We have the PAA-1 application on disc so I will see about sending you an electronic copy of the map.

As to the differences in ore body (PAA) configurations between slides 2 & 3, there are several observations.

1. Slide 2 as part of the original permit application, was prepared when exploration drilling was just being completed. Perhaps a more extensive evaluation of productivity altered the boundaries.
2. There are some heavily wooded areas that may have been excluded. For production area D, the east projection may have been shortened to provide sufficient buffer from a residence.
3. A major concern that was raised during the contested case hearing is the irregular configuration of the aquifer exemption boundary to avoid domestic water supply wells. This is especially the case with PAA-1, production area B. A large segment of ore body segment shown on slide 3 was excluded. This ore body extension passes by 2 residences with water supply wells and these wells would have been inside the aquifer exemption boundary. Because the water in this aquifer migrates, how can a domestic water supply well 60 feet outside of the boundary be classified as not using water from the aquifer exemption area? In addition, if an ore body that is partially mined passed outside of the aquifer exemption, how can the reaction be guaranteed to be confined to the exemption area?
4. The PAA boundaries for the ore deposits along the northwest fault have not been defined. The transmissivity of the northwest fault has not been defined. How can an aquifer exemption include an area that has not been delineated?

Slides Nos. 4 & 5 -The only information that I can suggest is the TWDB Central Gulf Coast Groundwater Availability Model data. Texas A&M Kingsville did a model several years ago for an Alliance that we were a part of and I will check with the group leader to see if he can be of assistance.

Jose, I appreciate your thorough evaluation of this pending aquifer exemption. If I can be of further assistance, please advise.

Sincerely,
Art Dohmann